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Performance on a physical employment standard assessment is significantly improved with familiarisation

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Abstract

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Performance on a Physical Employment Standard Assessment is Significantly Improved with Familiarisation

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Catriona Burdon, Kyoko Hiraiwa, Joonhee Park, John Sampson Centre of Human and Applied Physiology, School of Medicine, Faculty of Science, Medicine and Health, University of Wollongong, Australia The hypothesis that familiarisation with a loaded, self-paced recruitment test might decrease false negatives was assessed with untrained civilians who completed a firefighter recruit test. Twenty two (15 males, 7 females) healthy civilians (21.5 SD: 4.8 y, 71.8 SD: 10.8 kg, 175.1 SD: 8.3 cm) completed a firefighter recruit assessment circuit on three occasions, separated by a minimum of 24 hours. The test comprised of six loaded tasks; (i) a 26 kg single-handed load carry (195 m); (ii) 36 vertical steps with a 17.5 kg single-handed load carry; (iii) three × 40-s static holds (19.5 kg) with 20-s rest between holds; iv) a 27-kg hose drag (300 m); (v) a 27-kg hose drag with a 1.5-m height restriction (30 m); and (vi) a simulated 100-kg firefighter rescue with a 1.25-m height restriction (10 m). The protocol required participants to rest (seated) prior to completing tasks five and six if tasks one-four were completed <15 min. Participants were instructed to complete the course as fast as possible without running on each occasion while wearing firefighter personal protective equipment (21.5 kg). Participants were instructed on the correct technique and allowed to practise each task. Participants were excluded if they did not complete the entire test on the first visit. Task duration (s) and heart rate (b.min-1) were recorded for each task. Data were assessed using a one-way repeated measures ANOVA (mean ± 95% confidence intervals). Performance time improved with each visit (visit 1: 808 ± 78 s, visit 2: 698 ± 43 s, visit 3: 684 ± 48), but only the difference between visit one and two was significant (12.0 %, P <0.05). Improvements between visit one and two were observed with (i) 26 kg load carry (140 ± 15 s vs. 122 ± 13 s, 12.1 %, P <0.05); (ii) 36 vertical steps (78 ± 7 s vs. 69 ± 5 s, 10.4 %, P <0.05); and (iv) 27 kg hose drag (279 ± 31 s vs. 242 ± 18 s, 10.4 %, P <0.05). Performance on the two height-restricted tasks did not improve between visits (P>0.05). No significant difference in average or peak heart rate were observed during the circuit, however peak heart rate occurred earlier in 17 participants on the second trial (585 ± 106 vs. 416 ± 101 s; P <0.05). For this test battery, 91% of participants improved overall performance on the second trial. Therefore, it is recommended that two, but not three, tests should be used for recruit selection. The benefit here is that legally defensible physical employment assessments can be implemented with fewer candidates being turned away.